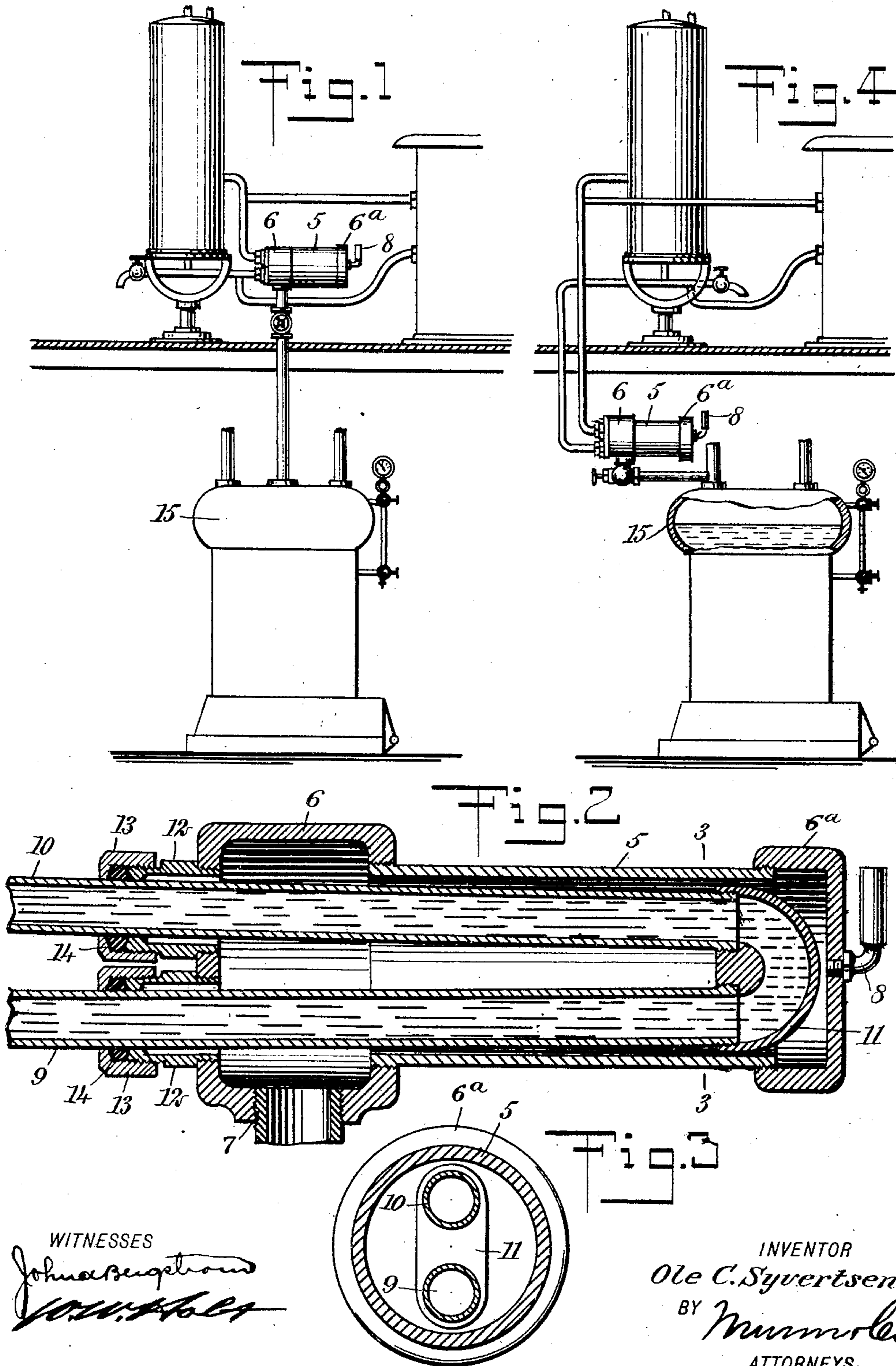


O. C. SYVERTSEN.
WATER HEATER.
APPLICATION FILED MAR. 14, 1908.

920,687.

Patented May 4, 1909.



WITNESSES
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WATER-HEATER.

No. 920,687.

Specification of Letters Patent.

Patented May 4, 1909.

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To all whom it may concern:

Be it known that I, OLE C. SYVERTSEN, a citizen of the United States, and a resident of Taunton, in the county of Bristol and State of Massachusetts, have invented a new and Improved Water-Heater, of which the following is a full, clear, and exact description.

This invention is an improved water heater for domestic purposes, more especially constructed to be used in connection with the boiler of a steam heating system and replace or augment the water heating apparatus of the kitchen range.

With this in view I provide a heating chamber preferably consisting of a cylindrical body having expanded heads secured at opposite ends, a coil within the chamber, and a common inlet and outlet to and from the chamber, for the circulation of the heating fluid. At the points where the return and supply pipes of the coil pass into the head, I preferably provide outwardly-projecting nipples surrounding the pipe having packing nuts, and forming in connection with the pipes, annular heating spaces in communication with the chamber.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a diagrammatic view showing my improved water heater in connection with the usual domestic heating apparatus; Fig. 2 is a central vertical section through my improved water heater; Fig. 3 is a cross-section of the same on the line 3—3 of Fig. 2; and Fig. 4 is a view similar to Fig. 1, showing the heater located at a different point.

The invention essentially consists of a heating chamber, and a water coil within the chamber, the chamber preferably consisting of a cylindrical body 5, having expanded heads 6 and 6^a secured at opposite ends, the head 6 having a common inlet and outlet connection 7 for the introduction and discharge of the heating fluid, and the head 6^a having a vent valve 8. The water coil preferably comprises a supply pipe 9 and a return pipe 10 which pass through the front of the head 6 and are connected together adjacent to the head 6^a by a return elbow 11, the

pipes being spaced a sufficient distance from the walls of the chamber and from each other to admit of the free circulation of the heating agent about them. Where the pipes of the coil pass through the head 6, outwardly-projecting nipples 12 are threaded into the latter and closely fit the pipe only at their outer ends, where each is provided with a packing nut 13, containing the packing 14. The inner portions of the bores of the nipples are increased in diameter to provide in connection with the pipes, annular heating spaces in communication with the heating chamber. This construction of the stuffing-boxes about the pipes, increases the heating surface as much as if the cylindrical body 5 of the chamber were increased to the same extent, without the disadvantages incident thereto.

The single connection with the heating chamber for both the inlet and outlet of the heating fluid, I have found in practice to give good results, especially where an increased volume of such fluid is maintained at both ends of the coil, as is afforded by the expanded heads 6 and 6^a. This feature of the invention also obviously enables the installation and maintenance of the heater at much less expense than if a separate inlet and outlet were provided.

If the heating area of the coil is greater than desired, the same can easily be diminished by drawing it from the heating chamber through the stuffing boxes, and in this way any heating area within certain limits be obtained.

In Fig. 1 I have shown the application of the heater to an ordinary form of domestic heating apparatus, in which the connection 7 is piped to the boiler 15 of the steam heating system, and the supply and return pipes of the coil connect with the tank through the pipes leading to and from the water back of the kitchen range.

The application of the heater in Fig. 4 is in all respects the same as that shown in Fig. 1, except that the heater is located in the cellar instead of in the kitchen, which in some cases is found preferable.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

In a water heater, the combination of a heating chamber having expanded heads attached at opposite ends, nipples connected to the end of one of said heads, having packing
5 nuts threaded thereon, and a supply pipe and a return pipe connected within the chamber, slidable in said packing nuts and forming annular heating spaces with said nipples.

In testimony whereof I have signed my name to this specification in the presence of 10 two subscribing witnesses.

OLE C. SYVERTSEN.

Witnesses:

LILLA E. SNOW,
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